

Sulfate by Turbidimetric Method SM 18th, 19th Ed. 4500-SO₄²⁻ E						Page 1 of 1
Facility Name: _____ VELAP ID: _____						
Assessor Name: _____ Analyst Name: _____ Inspection Date: _____						
Relevant Aspect of Standards	Method Reference	Y	N	N/A	Comments	
<i>Records Examined:</i> SOP Number/ Revision/ Date _____ Analyst: _____ Sample ID: _____ Date of Sample Preparation: _____ Date of Analysis: _____						
Is one of the following used? <input type="checkbox"/> Nephelometer <input type="checkbox"/> Spectrophotometer, at 420 nm <input type="checkbox"/> Filter photometer, max. transmittance 420 nm	2.b					
Is a constant stirring speed used during analysis?	2.a					
Is the appropriate buffer used? <input type="checkbox"/> Buffer A: 30 g magnesium chloride, 5 g sodium acetate, 1 g potassium nitrate, 20 mL acetic acid, diluted to 1000 mL. <input type="checkbox"/> Buffer B: (IF sample SO ₄ ²⁻ is less than 10 mg/L) 30 g magnesium chloride, 5 g sodium acetate, 1 g potassium nitrate, 0.111 g sodium sulfate, 20 mL acetic acid, diluted to 1000 mL.	3.a, 3.b					
Is a 100 mL portion of sample used? <i>(Or a suitable portion diluted to 100 mL with distilled water.)</i>	4.a					
Is a 20 mL portion of buffer solution added to sample while mixing, is a spoonful of BaCl ₂ crystals then added, and is timing begun immediately?	4.a					
Is the mixture stirred for 60 ± 2 seconds at constant speed?	4.a					
After stirring for 60 seconds, is the sample poured into the absorption cell and measured within 5 ± 0.5 minutes?	4.b					
Is a calibration curve prepared by carrying standards through the same procedure as samples? <i>(Standards should be at 5 mg/L increments.)</i>	4.c					
Are sample readings corrected for color and turbidity by analyzing and subtracting sample blanks (with no BaCl ₂ added)?	4.d					
Are results calculated correctly? $\text{Mg SO}_4^{2-}/\text{L} = \frac{\text{mg SO}_4^{2-} \times 1000}{\text{mL sample}}$ -If buffer A was used, determine SO ₄ ²⁻ concentration directly from the calibration curve after subtracting sample absorbance before adding BaCl ₂ . -If buffer B was used, subtract SO ₄ ²⁻ concentration of blank from apparent SO ₄ ²⁻ concentration as determined using the formula.	5					
Notes/Comments:						